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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,702	12/13/2005	Holger Hauptmann	58688US004	1948
32692 7590 11/28/2007 3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			EXAMINER MCDONOUGH, JAMES E	
			ART UNIT	PAPER NUMBER
			1793	
			NOTIFICATION DATE	DELIVERY MODE
			11/28/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## Office Action Summary

Application No.

10/560,702

Applicant(s)

HAUPTMANN ET AL.

Examiner

James E. McDonough

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 27-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 27-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/29/2007</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

**Original Rejection**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 29 is rejected under 35 U.S.C. 102(b) as being anticipated by Garcia et al. (USP 6,464,765).

Garcia et al. teaches providing a ceramic frame work coating it with a solution comprising a saturated solution of soluble transition or rare earth metal salts which provide color, 2 to 7 parts by weight of polyethylene glycol, solvents such as water and alcohols, and firing the ceramic substrate to fix the metal on the ceramic (abstract, column 2, lines 13-64 column 3, line 16 to column 4, line 14), where the ceramic substrate is enriched with additives such as  $ZrO_2$  and  $Al_2O_3$  (column 3, lines 65-66), and the composition after being added to the ceramic framework penetrates (adsorbs) up to about 2 mm into the surface (column 4, lines 20-25).

Although, Garcia et al. does not teach the use of 10,000-50,000 Mn polyethylene glycol, this is a product by process limitation and since the polyethylene glycol will be

driven off during the firing process, the resultant product will be expected to be similar absent any evidence to the contrary.

Although, Garcia et al. does not teach the precise percent of metal in the solution, this is a product by process limitation and since the rest of the component will be driven off during the firing process, the resultant product will be expected to be similar absent any evidence to the contrary.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 27 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garcia et al. (USP 6,464,765) as applied to claim 29 above and further in view of Williams et al. (USP 6,786,994).

Although, Garcia et al. does not explicitly teach a metal salt, soluble in solvent in the range of 0.01-7% or polyethylene glycol having a Mn from 10,000-50,000, Garcia does teach the rest of the limitations of the claims. However, because Garcia et al. teaches that humectants can be used, which benefit the composition by preventing premature drying of the solution (column 3, lines 51-64) and Williams et al. teaches 1-20 wt% of a humectant that can be polyethylene glycol with a molecular weight from 100 to 40,000 (column 14, lines 52-62), it would have been obvious to someone of ordinary skill in the art at the time the invention was made to combine the teachings of Garcia et al. with that of Williams et al. with a reasonable expectation of success and the expected benefit that the solution will not prematurely dry before firing.

Although, the references are silent as to the weight percent of metal ions in the solution Garcia et al. teaches the use of saturated solutions, it is obvious to add as much metal ion as possible to increase the coloring properties of the solution (one of the problems with using solutions of metal salts is that the resulting coloration tends to be not intense Garcia et al. column 1, lines 20-23, this is why Garcia et al. use a slurry of saturated metal salts/complexes and suspended particles of metal salts/complexes), However, it is well known that many salts and complexes of transition metals and rare earth metals are only sparingly soluble and often max out in the millimolar concentration range, which would be less than 7 wt% of metal ion relative to the composition.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Garcia et al. (USP 6,464,765) in view of Williams et al. (USP 6,786,994) as applied to claims 27 and 29-30 above in further view of Schrewellus (USP 3,027,331).

Although, Garcia et al. and Williams et al. do not explicitly disclose the use of a presintered ceramic framework, Garcia et al. and Williams et al. teach the rest of the limitations of the claims. However, because Schrewellus teaches that sintering a ceramic increases its strength and allows it to retain its shape (column 15, lines 26-53), it would have been obvious to someone of ordinary skill in the art at the time the invention was made to combine the teachings of these references with a reasonable expectation of success and the expected benefit that the product formed will be stronger and more able to retain its shape during the coating and firing process.

### **Response to Arguments**

Applicants' arguments against the 112 rejection over claim 29, are persuasive, therefore, the 112 rejection of claim 29 is withdrawn.

Applicants argue against the 102 rejection over Garcia.

Applicants argue that the composition of Garcia is different than the instant application because of the use of polyethylene glycol, even though applicants admit that this is driven off during the firing process.

Applicants argue that even though the final metal content in the ceramic framework depends on many factors such as process conditions and the shape of the product among others, that the concentration of metal/metal ions in the coloring solution would be a significant factor. While the examiner agrees that the concentration of the solution would affect the amount metal in the final product there are many other variables to consider, and one skilled in the art would clearly understand that an identical article can be formed by using different solutions under different conditions.

Applicants argue that they get unexpected results because of the amount of sintering deformation seen after treatment and compare an untreated framework (0.038 mm), a treated framework without PEG (0.20 mm), and a treated framework with PEG (0.061 mm). Here it can be seen that the composition with PEG is closer to the untreated composition than the composition without PEG, this is not persuasive because:

- 1.) The sintering deformation is not a claimed limitation.
- 2.) It is not clear how this deformation give superior results.
- 3.) One would expect more deformation in the composition with PEG as it is driven off during firing and one skilled in the art would expect it to shrink as it loses mass (common sense).
- 4.) if more deformation is unwanted then the untreated composition wins, if deformation is wanted then the solution without Peg wins, either way these results add weight to examiners position on the rejection.

Applicants argue against the 103 rejections.

Applicant's arguments are either towards limitations not in the claims or considered piecemeal analysis of the references.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., sintering deformation) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

### **Conclusion**

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not



mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James E. McDonough whose telephone number is (571)272-6398. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571)272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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